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**GERMAN / ENGLISH TRANSLATION OF**

**Source: German Patent Application DE 1 536 009 A**

**Title of the Invention: Vacuum-Packed Solid Body**

**Your Ref #: No. 6135**

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(54) Title: Vacuum-packed solid body

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Representative: -

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## "Vacuum-packed Solid Body"

The invention relates to a solid of compressible elastic material, especially foam, vacuum-packed in a film wrapping. It is known to fill solid, incompressible goods into wrappings made of elastic, gas-, water- and water vapor-impermeable film, to evacuate the wrappings with vacuum pumps and then heat seal them. It is also known to utilize the shrinkage effect of a film under the influence of heat, to press the air out of the package.

The objective of this procedure is to improve the storage life of the packed goods and, at the same time, to keep the goods in a predetermined position. A certain volume reduction occurs through a reduction of intermediate spaces between the package and good, and in folded goods between the individual goods layers, but is not very large, because of the incompressibility of the packed products. Compressible products, for example, soft polyurethane foam, have thus far been packed only in conventional manner. It is proposed according to the invention that the volume of the pores of such bodies be reduced in the wrapping to a fraction of the volume that they occupy when their walls exert no elastic restoring forces. In this case, the advantage is gained that the packed goods can be reduced to a fourth of their initial volume, which means a sharp reduction in the required storage and transport volume. During transport, in particular, the saved space is significant, because in goods with lower volumetric weight, the freight rates pertain to the transported volumes. A further advantage is achieved, in that aging is reduced, because of the reduced effect of air.

The volume of the pores of the packed body is preferably reduced to a value at which the stress of the pore walls lies within limits imposed by the value of the permanent deformation. An appropriate method for carrying out the invention consists of introducing the solid body into the wrapping, compressing it mechanically or hydraulically together with the wrapping, and heat sealing the adjacent sections of the edge of the wrapping.

Compression is preferably carried out in a press between an upper and lower plate.

A practical example is shown in the drawing. In the drawings:

Fig. 1 shows the unpacked and uncompressed foam body and the package,

Fig. 2 shows the same view as in Fig. 1, but with compressed foam body,

Fig. 3 shows the same view as in Fig. 2 after heat sealing of the wrapping.

A foam body 1 is covered on the opposite surfaces with plastic film 2 and 3, so that the edges 4 and 5 of the plastic film protrude on all sides.

The package is then placed between the pressure plates of a press, and the body compressed to a fraction of its original thickness (Fig. 2). The edges 4 and 5 of films 2, 3 are heat-sealed in the usual manner, so that sealed seam 6 is produced.

When the body is removed from the press, it cannot expand again, on the one hand, because of the force with which the two films hold it together and, on the other hand, because of external atmospheric pressure. Another possibility of packing consists of inserting the foam body into a gas-, water- and vapor-impermeable wrapping through an opening, compressing it together with the wrapping under a press, and air-tight closing the introduction opening in the compressed state of the body by sealing.

The advantage of this method lies in the fact that a uniform deformation of the product occurs, which is not always the case during evacuation with a vacuum pump, because the products are warped.

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## Claims

- 1) Solid body of compressible elastic material, especially foam, vacuum-packed in a film wrapping, characterized by the fact that the volume of the pores of the body (1) is reduced to a fraction of the volume that they occupy when their walls exert no elastic restoring forces.
- 2) Wrapping and solid according to Claim 1, characterized by the fact that the volume of the pores of body (1) is reduced to a value, at which the stress of the pore walls lies within the limit imposed by the value of the permanent deformation.
- 3) Method for production of a solid in a wrapping according to Claims 1 and 2, characterized by the fact that the solid body (1) is introduced to wrapping (2, 3), mechanically or hydraulically compressed together with it, and the adjacent sections of the edge (4, 5) of the wrapping (2, 3) are heat sealed.
- 4) Method for production of a solid body in a wrapping according to Claim 3, characterized by the fact that compression occurs in a press between an upper and lower plate.

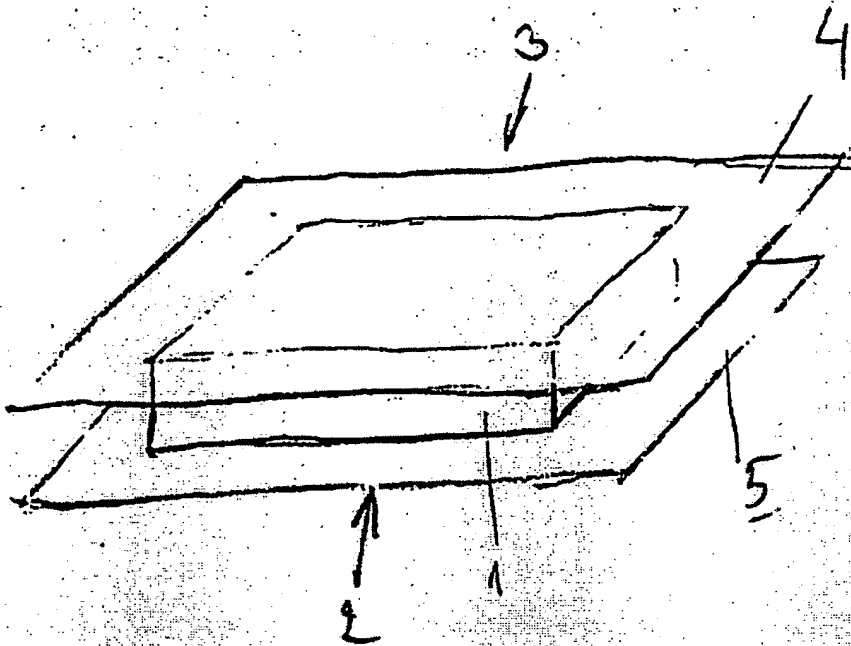


Fig 1

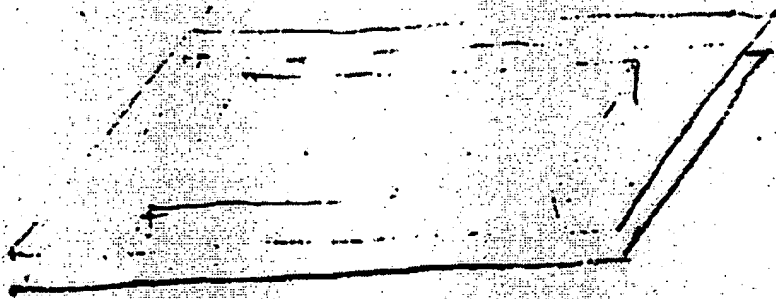


Fig 2

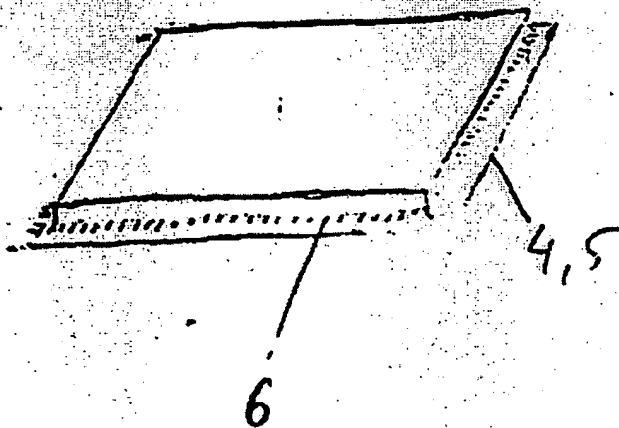


Fig 3